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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,555	08/22/2003	Ali Sazegari	P2807-828	8696

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EXAMINER

NGO, CHUONG D

ART UNIT PAPER NUMBER

2193

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/645,555

**Applicant(s)**

SAZEGARI ET AL.

**Examiner**

Chuong D. Ngo

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08/22/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 and 19 is/are allowed.
- 6) ☒ Claim(s) 1-17 and 20-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>02/23/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-15 and 20-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-15 are directed to a computer implemented method of calculation where the inputs are numbers and the results are also numbers. Claims 20-23 are directed to a computer program stored in a computer readable storage medium for implementing the method. In order for a claimed invention that is directed to such a computer implemented method of calculation, or a computer program stored in a computer readable storage for implementing a computation to be statutory, the claimed invention must accomplish a practical application. That is the claimed invention must transform an article or physical object to a different state or thing, or produce a useful, concrete and tangible result. *State Street*, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Also see "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility", OG Notices: 22 November 2005. It is clear from claims 1-15 and 20-23 that the claims merely involves calculations and manipulations of data in performing computations. The claimed invention does not result in a physical transformation. The inputs are numbers and the outputs are also numbers. The result of the invention is merely numerical values without a practical application recited in the claims. It is not real world result, and thus is not useful, concrete and tangible. Therefore, the claimed invention is directed to non-statutory subject matter as the claims fail to assert a practical application to the invention.

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simanapalli et al. (6,002,726) in view of Noetzel (5,068,816).

Simanapalli et al. discloses in col. 4, lines 35-45 a Chebyshev minimax polynomial approximation of a power function  $x^{-1}$  but does not specifically disclose how to perform a polynomial calculation. Noetzel discloses in figure 1 a polynomial calculation in a piecewise manner by storing sets of coefficients in memory (9,11,13,15), and in response to receipt of an input data value (5), retrieving the stored coefficients and evaluating (46) the polynomial with the input data value to generate an output value (44) as claimed. It would have been obvious to person of ordinary skill in the art to perform the Chebyshev minimax polynomial approximation of Simanapalli et al. by the calculation as taught by Noetzel in order to quickly evaluate a function (see col.2, lines 47-50).

5. Claims 5-8,10-14,16,17,20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simanapalli et al. (6,002,726) in view of Noetzel (5,068,816) as applied to claims 1-4 above, and further in view of Budge (2003/0195907).

It is noted that the combination of Simanapalli et al. and Noetzel does not specifically disclose a polynomial calculation in a vector processor as claimed. However, Budge discloses in

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paragraph [0043], lines 5-14, that polynomial calculation is a good fit for vector (SIMD) processor. It would have been obvious to a person of ordinary skill in the art to implement the polynomial calculation of the combination of references by a vector processor as suggested by Budge in order increase the speed of processing.

6. Claims 18 and 19 are allowed.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D. Ngo whose telephone number is (571) 272-3731. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Chuong D Ngo  
Primary Examiner  
Art Unit 2193

08/31/2006